



# The Massachusetts Bay Transportation Authority

## Corrective Action Plan (CAP)

**FTA 23-10-MBTA-  
CAT2-4**

### BACKGROUND

**Overview:** FTA issues Special Directive 22-10 to require the Massachusetts Bay Transportation Authority (MBTA) to address findings documented in FTA's Safety Management Inspection (SMI) report released on August 31, 2022. Conducted between April 14 and June 30, 2022, FTA's SMI reviewed the MBTA rail transit system management, operations, and maintenance programs. This Special Directive identifies six findings requiring action that the MBTA must take to enhance and expedite implementation of the agency's SMS, including the development of procedures, safety management training, safety risk assessment, and safety assurance activities to build the organization's capability to identify safety concerns and to prioritize action to mitigate safety risk.

### PURPOSE

This Corrective Action Plan has been developed to address **Category 2 – Prioritization of safety management information**

#### FTA Finding

##### Prioritization of safety management information

- Finding 4: MBTA's safety investigations and safety assurance activities do not consistently collect and analyze information on precursor factors.

#### FTA Required Action

- 4.A MBTA must update its Safety Assurance process to include monitoring of safety risk mitigations with a) compliance-based activities to provide the baseline for monitoring implementation status and b) performance-based activities to monitor the actual effectiveness of safety risk mitigations.
- 4.B MBTA must prepare a monthly look-ahead schedule for prioritized safety risk monitoring activities that include safety risk mitigations and corrective actions in place to address MBTA's highest safety priorities.
- 4.C MBTA must develop and document guidance, and deliver training for safety investigators that ensure the consideration of precursor factors in the analysis of the chain of events leading to a safety event (accident, incident, or occurrence), including but not limited to, for example:
  - Suitability of resources available to frontline personnel for operational and maintenance activities
  - Deficiencies in policies, procedures, rulebooks
  - Outdated policies, procedures, and rulebooks
  - Deficiencies/inadequacies in training shortcomings in supervision
  - Deviations from procedures and rules reasons for lack of adherence to procedure and rules
  - The limited success of discipline to address safety issues

### ANALYSIS AND RECOMMENDATIONS

#### Analysis

- MBTA's Transit Safety Plan incorporates within its safety risk management process risk mitigation monitoring to ensure that mitigations are effectively implemented, performing their intended functions, and ultimately safeguarding the MBTA, its personnel, contractors, and the public from hazards. A standard operating procedure, Risk Mitigation and Monitoring, was developed to guide this process. Mitigation verification activities, deliverables, and timelines are developed during the initial development of the risk mitigation plan. Safety management and staff coordinate with outside departments to verify that each mitigation has been implemented successfully. This process is not currently scheduled in coordination with outside teams and is not applied uniformly across closed mitigations.
- The Deputy Director of Safety Assurance and Promotion, with the Director of SMS and Safety Oversight, coordinates detailed logistics and schedules for mitigation monitoring and verification activities, if necessary, approximately one month prior to the arrival of each verification milestone or estimated completion date.



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- MBTA's Safety Event Investigation Manual and training specifies precursor factors, based on Human Factors Analysis and Classification System, in its causal factors identification process, which includes resource problems, policies and procedures, training, supervision, and discipline.

### Recommendations

- MBTA will review and modify, as required, its investigation and safety assurance guidance to ensure guidance documents sufficiently address the effectiveness of mitigations, preparation, and execution of safety risk monitoring activities, and consideration of precursor factors in investigations. In addition, the trainings associated with each of these programs will be examined to confirm their content is consistent with the documented programs and any gaps identified during the review process are incorporated into the trainings.

### ACTION PLAN

**Description:** MBTA has onboarded a consulting firm to assist with a comprehensive review of investigation and safety assurance practices and has begun immediate delivery of refresher training on accident investigation principles to safety department staff. MBTA's consultants and training support staff will coordinate with MBTA management to implement the action items described below.

### PLAN STRUCTURE

#	Actionable Items	Description	Responsible Party <sup>1</sup>	Est Start <sup>2</sup>	Est End <sup>3</sup>
1	Establish CAP Advisory Group	Establish an advisory group of internal stakeholders to review and guide implementation of the corrective action plan.	QCOO: Katie Choe Safety: Ronald Ester	10/17/22	10/30/22 [A]
2	Strategic Planning Session	Conduct a strategic planning session for SD 22-10 Finding 4 CAP implementation with the advisory group identified in Actionable Item #1.	QCOO: Katie Choe Safety: Ronald Ester GM: Lynsey Heffernan	11/1/22	11/1/22 [A]
3	Procure Consulting Services	Issue RFP or Task Order for consulting services to evaluate the Transit Safety Plan, Risk Mitigation and Monitoring SOP, and Safety Event Investigation Manual in relation to mitigation monitoring and validation and safety investigation precursor factors and incorporate changes into the relevant plan(s).	QCOO: Katie Choe Safety: Michael Catsos	11/16/22	12/22/22 [A]
4	Onboard Consultant	Onboard selected consultant.	QCOO: Katie Choe	12/23/22	2/17/23 [A]

<sup>1</sup> In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

<sup>2</sup> Est Start – Estimated Start Date

<sup>3</sup> Est End Estimated Completion Date




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5	Review Tools and Processes for Risk Mitigation	Develop template for comprehensive review of existing programs and standard operating procedures related to risk mitigation and monitoring based on Transit Safety Plan and applicable federal/state regulations. Apply template to MBTA processes and documents, including Safety Department SOPs and external program documents such as the Safety Rules Compliance Program Manual. Identify proposed revisions to MBTA documentation.	QCOO: Katie Choe Safety: Michael Catsos	2/24/23	4/29/23 [A]
6	Increase Staffing of Investigator Positions	In alignment with Safety staffing and hiring plans, increase staffing of investigation team Safety Lead Investigator, Safety Specialist, and Safety Analyst roles.	Safety HR	Ongoing	4/30/24
7	Assess backlog of incident reports	Catalog all investigation reports that are not complete within the 60-day timeline	Safety QCO	9/11/23	9/29/23
8	Develop plan to complete backlogged/late reports	Develop a work plan with timelines to address the overdue reports.	Safety: Director of Investigations	10/2/23	12/15/23
9	Develop tracking tool for accident investigation through any follow on actions	Develop a tool to track the steps of an event investigation, to include all elements in the accident investigation manual, to enable visibility into status of investigations, root causes determined and any follow-on actions, including CAPs, as well as status of the report.	Safety ITD OPMI QCO Operations GM: Compliance officer	10/17/23	1/19/24
10	Draft Investigation Quality Control Process	Draft a checklist for management quality control review of investigation reports. This checklist will be finalized in AI 13.	Safety: Director of Investigations	9/11/23	9/29/23
11	Apply Investigation Manual and Procedures	Submit draft reports, final reports, and quality control review checklists to DPU and FTA. The checklist will be user tested once the draft is completed in AI 10 and new iterations of it will be utilized based on user feedback, until finalization in AI 13.	Safety: Director of Investigations	10/2/23	3/15/24
12	Retrain Safety Event Investigators	Deliver training to refresh staff on event investigation principles. Feedback from the trainees will be requested on the checklist drafted in AI 10 and being user tested in AI 11.	Safety L&D/Training	10/2/23	12/29/23
13	Develop Investigation Quality Control Process	Incorporate feedback received in AI 12 on the checklist for management quality control review of investigation reports, circulate to other groups, and finalize.	Safety: Director of Investigations Operations	12/1/23	12/29/23


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14	Resource and Apply Investigation Quality Control Process	In alignment with Safety hiring plan, identify managers and support staff to apply a sufficient level of quality control to the investigation process. Begin using these personnel to apply quality control process.	Safety: Director of Investigations	12/18/23	2/16/24
15	Coordinate CAP Development with Operating Departments	Work with stakeholders to develop a process for coordination during CAP development, to include at a minimum, implementing a process (e.g., DocuSign sign-off, Origami process flow) for investigation report corrective action plans.	Safety: Director of Investigations QCO Operations	10/2/23	6/7/24
16	Prioritize Risk Mitigation Monitoring	Establish criteria that define high-risk mitigations and corrective actions that should be included in the safety assurance monitoring program.	Safety	4/11/24	5/10/24
17	Define Mitigation Monitoring Performance Metrics	Establish and document performance metrics to track and demonstrate the success of mitigation monitoring activities. Include metrics that establish linkages between accident investigation results and mitigation effectiveness.	Safety: SMS Lead	5/13/24	6/21/24
18	Train Investigators on Lessons Learned	Schedule and complete training for Safety investigators on strengths, gaps, and areas for improvement identified through quality control checklist reviews.  <b>Required Action 4C: Investigator Training</b>	Safety: Director of Investigations	6/10/24	9/27/24
19	Develop Mitigation Monitoring Process	Establish and document explicit criteria to guide the application of safety assurance activities to risk mitigations, including the frequency and intensity of activities as well as the compliance- or performance-based nature of activities. Consider a comprehensive range of risk mitigation types that may be subject to assurance under these criteria.  <b>Required Action 4A: Mitigation Monitoring</b>	Safety	6/24/24	8/2/24
20	Define Operating Departments Involved in Mitigation Monitoring	Clarify and document roles and responsibilities for all business units related to mitigation monitoring.	Safety: SMS Lead	8/5/24	9/6/24
21	Train Operating Departments	Train operating department management to the requirements documented in AI 20.	Safety: SMS Lead	9/9/24	11/8/24
22	Initiate Mitigation Monitoring Activities	Implement the mitigation monitoring process developed in AIs 19 and 20.	Safety	11/12/24	1/10/25





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23	Schedule Mitigation Monitoring	Generate and deploy a monthly look-ahead schedule for risk mitigation monitoring activities. <b>Required Action 4B: Look-Ahead Scheduling</b>	Safety: SMS Lead	1/13/25	2/7/25
24	Develop Mitigation Monitoring Training	Develop training materials on compliance- and performance-based monitoring activities, prioritization of monitoring activities, and roles/responsibilities.	Safety: SMS Lead	2/10/25	3/7/25
25	Conduct Mitigation Monitoring Training	Deliver the training developed in AI 24 to Safety staff and impacted business units.	Safety: SMS Lead	3/10/25	4/25/25
26	CAP Verification	Evaluate actionable items/deliverables before submission to FTA to confirm there is reasonable evidence that the findings and this required action have been resolved, considering the scope and performance measures.	QCOO Safety	9/16/24	6/20/25

## COMPLETION DOCUMENTATION

### Performance Metrics

- Mitigation and monitoring activities are defined in the Safety Assurance section of the Transit Safety Plan and the Mitigation and Monitoring SOP
- Mitigation measures are tracked, validated, and closed in a timely manner
- Mitigation measures that are not effective are re-evaluated with new mitigations developed to ensure reduction in safety risk
- SMS database safety assurance module monitors risk mitigation measures
- Safety investigation procedure includes a complete list of precursors that promote comprehensive safety event data collection

### Verification

- TSP updated to describe the mitigation and monitoring process in the safety assurance section
- Mitigation and Monitoring SOP updated
- SMS database tracks mitigations
- Monthly look-ahead schedule completed and executed every month
- Safety investigations include a comprehensive list of causal factors
- Operating departments collect and utilize safety data (aligning with safety monitoring, auditing, and compliance activities with data-driven safety management priorities) to support ongoing safety data collection related to the effectiveness of safety risk mitigations.

## BUDGET/COST ESTIMATE

**Overview:** Costs for this corrective action plan include consulting services to support a comprehensive review of the safety risk mitigation and monitoring process and incorporate changes into the Transit Safety Plan, development of new training materials, and implementation of new training to involved personnel.


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Segment Code	Cost Estimate (\$)
Consulting services for plans and schedule reviews and updates	100,000
Development of new and revised virtual training materials	100,000
30% Contingency	60,000
<b>Total</b>	<b>260,000</b>

**CORRECTIVE ACTION PLAN COMMITMENT**
**Responsible Parties**

Department <sup>4</sup>	Name	E-mail	Signature
Safety	Michael Catsos <i>Director of SMS and Safety Oversight</i>	[REDACTED]	DocuSigned by: <i>Dennis Lytton</i> 2C8862AB8238F492...
Operations	Ryan Coholan <i>Chief Operating Officer</i>	[REDACTED]	DocuSigned by: <i>R. Miller</i> DA71979273934C3...
Workforce	Ahmad Barnes <i>Chief Workforce Officer</i>	[REDACTED]	DocuSigned by: <i>Ahmad Barnes</i> C905D70689224D6...
Finance	Mary Ann O'Hara <i>Chief Financial Officer</i>	[REDACTED]	DocuSigned by: <i>Mary Ann O'Hara</i> 3F02AECAC6884B1...
Information Technology	John Glennon <i>Chief Information Officer</i>	[REDACTED]	DocuSigned by: <i>John R. Glennon</i> 830151B235C34CF...
Procurement	Jeff Cook <i>Chief Procurement &amp; Contract Administration Officer</i>	[REDACTED]	DocuSigned by: <i>Jeff Cook</i> D68238F5501B24B0...
General Manager's Office	Lynsey Heffernan <i>Assistant General Manager for Policy &amp; Strategic Planning</i>	[REDACTED]	DocuSigned by: <i>Lynsey Heffernan</i> 68022497BCF94B6...

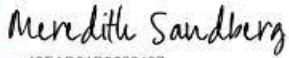
**Executive Leadership of Responsible Parties**

DocuSigned by: <i>David Panagore</i> 481635AF06E2457...	9/28/2023
<b>David Panagore</b> MBTA Chief Administrative Officer	Date

<sup>4</sup> Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

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DocuSigned by:



9/28/2023

**Meredith Sandberg***MBTA Chief of Quality, Compliance & Oversight*

Date

DocuSigned by:

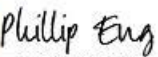


9/29/2023

**Timothy Lesniak***MBTA Chief Safety Officer*

Date

DocuSigned by:



9/29/2023

**Phillip Eng***MBTA General Manager & CEO*

Date